

CLAIMS:

1. A device (1) for generating a medium stream, which device (1) comprises a chamber (4), which chamber (4) comprises chamber walls (2, 3) lying opposite one another and at least one medium opening (15', 16', 27, 28, 29, 30) for the medium stream (8) and is equipped with a diaphragm means (5), which diaphragm means (5) is provided and
5 constructed for generating the medium stream (8) and which diaphragm means (5), in an inactive operating state of the device (1), is arranged substantially untensioned in the chamber (4) between the chamber walls (2, 3) and associated with which diaphragm means (5) are drive means (6), responsive to electrical drive signals, for driving the diaphragm means (5) to deform the same, the drive means (6) being arranged to impose a deformation
10 on the diaphragm means (5) in an active operating state of the device (1), during which deformation the diaphragm means (5) have an inner mechanical tension.
2. A device (1) as claimed in claim 1, wherein the drive means (6) comprise electrodes (2.1, 2.2 ... 3.3) arranged on the chamber walls (2, 3) lying opposite one another.
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3. A device (1) as claimed in claim 2, wherein the diaphragm means (5) comprises a metal foil.
4. A device (1) as claimed in claim 2, wherein the diaphragm means (5)
20 comprises a foil made of a dielectric material.
5. A device (1) as claimed in claim 1, wherein the diaphragm means (5) consists at least partly of piezoelectric material.
- 25 6. A device (1) as claimed in claim 5, wherein the diaphragm means (5) comprises an electrode.

7. A device (1) as claimed in claim 1, wherein the diaphragm means (5) comprises two end regions (5.1, 5.2) provided a distance apart from one another, which end regions (5.1, 5.2) are fixed in the chamber (4).

5 8. A device (1) as claimed in claim 1, wherein the drive means (6) contain an electromechanical drive element (17), and the diaphragm means (5) has an end portion (5.1) that is connected to the electromechanical drive element (17).

9. A device (1) as claimed in claim 1, wherein the chamber (4) is of substantially
10 cuboidal construction and comprises two end walls (15, 16) lying opposite one another.

10. A device (1) as claimed in claim 1, wherein the chamber (4) comprises at least two medium openings (27, 28, 29, 30) provided spaced apart from one another.

15 11. A device (1) as claimed in claim 1, wherein the diaphragm means (5) has an at least substantially constant thickness.

12. A device (1) as claimed in claim 9, wherein the diaphragm means (5) is fixed with two opposing end regions (5.1., 5.2) to the end walls (15, 16) of the essentially cuboidal
20 chamber (4).

13. A device (1) as claimed in claim 1, wherein the drive means (6) are designed to impose a deformation having at least a pre-determinable frequency.

25 14. A device (1) as claimed in claim 12, wherein the drive means (6) are designed to impose a cyclic deformation in the form of a traveling wave on the diaphragm means (5).

15. A device (1) as claimed in claim 9, wherein the diaphragm means (5) is fixed with one end region (5.1) close to one end of the cuboidal chamber (4) to the one chamber wall (3) of the mutually opposed chamber walls (2, 3) and with an opposite end region (5.2) close to the opposite end of the chamber (4) to the other chamber wall (2) of the mutually
30 opposed chamber walls (2, 3).

16. A device (1) as claimed in claim 15, wherein the diaphragm means (5) comprises a transition portion (10) extending in operation substantially at right angles to the chamber walls (2, 3) lying opposite one another.

5 17. A device (1) as claimed in claim 15, wherein medium openings (15', 16') are provided at both ends of the chamber (4).

18. A device (1) as claimed in claim 1, in which device (1) the medium stream (8) is a stream of a gaseous medium.

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19. A device (1) as claimed in claim 1, which is provided for the generation of sound by means of the medium stream generated.

20. A device (1) as claimed in claim 1, which is provided as pump device for the
15 medium stream.

21. A device (1) as claimed in any one of the preceding claims, wherein a number of chambers (4) are provided in the device (1), which chambers (4) are arranged in one unit.

20 22. A device (1) as claimed in claim 1, wherein the diaphragm means (5) and/or the chamber walls (2, 3) have an insulating layer (11).

23. A device (1) as claimed in claim 2, wherein the diaphragm means (5) and/or the chamber walls (2, 3) have a structured surface.